Subpart E—Unlicensed National Information Infrastructure Devices

§ 15.401 Scope.

This subpart sets out the regulations for unlicensed National Information Infrastructure (U–NII) devices operating in the 5.15–5.35 GHz and 5.725–5.825 GHz bands.

[63 FR 40835, July 31, 1998]

§ 15.403 Definitions.

(a) *Average symbol envelope power*. The average symbol envelope power is the average, taken over all symbols in the signaling alphabet, of the envelope power for each symbol.

(b) *Digital modulation*. The process by which the characteristics of a carrier wave are varied among a set of predetermined discrete values in accordance with a digital modulating function as specified in document ANSI C63.17–1998.

(c) *Emission bandwidth*. For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Determination of the emissions bandwidth is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

(d) *Peak power spectral density*. The peak power spectral density is the maximum power spectral density, within the specified measurement bandwidth, within the U–NII device operating band.

(e) *Peak transmit power*. The maximum transmit power as measured over an interval of time of at most 30/B or the transmission pulse duration of the device, whichever is less, under all conditions of modulation.

(f) *Power spectral density*. The power spectral density is the total energy output per unit bandwidth from a pulse or sequence of pulses for which the transmit power is at its peak or maximum level, divided by the total duration of the pulses. This total time does not include the time between pulses during which the transmit power is off or below its maximum level.

(g) *Pulse*. A pulse is a continuous transmission of a sequence of modulation symbols, during which the average symbol envelope power is constant.

(h) *Transmit power*. The total energy transmitted over a time interval of at most 30/B (where B is the 26 dB emission bandwidth of the signal in hertz) or the duration of the transmission pulse, whichever is less, divided by the interval duration.

(i) *U–NII devices*. Intentional radiators operating in the frequency bands 5.15–5.35 GHz and 5.725–5.825 GHz that use wideband digital modulation techniques and provide a wide array of high data rate mobile and fixed communications for individuals, businesses, and institutions.

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§ 15.405 Cross reference.

(a) The provisions of subparts A, B, and C of this part apply to unlicensed U–NII devices, except where specific provisions are contained in subpart E. Manufacturers should note that this includes the provisions of §§ 15.203 and 15.205.

(b) The requirements of subpart E apply only to the radio transmitter contained in the U–NII device. Other aspects of the operation of a U–NII device may be subject to requirements contained elsewhere in this chapter. In particular, a U–NII device that includes digital circuitry not directly associated with the radio transmitter also is subject to the requirements for unintentional radiators in subpart B.

[63 FR 40835, July 31, 1998]

§ 15.407 General technical requirements.

(a) *Power limits:*

(1) For the band 5.15–5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10logB, where B is the 26-dB emission bandwidth in MHz. In addition, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antennas of directional